

What is claimed is:

1. A portable data storage device adapted to couple  
with an electronic apparatus for said electronic  
5 apparatus to automatically execute and play an  
internal file stored in said portable data storage  
device, comprising:  
  
an interface unit for coupling with a processing  
10 unit of said electronic apparatus;  
  
a flash memory into and from which data can be written  
and read; and  
  
15 a control unit located between and coupled with said  
interface unit and said flash memory to control input  
and output of data into and from said flash memory;  
  
said portable data storage device being  
20 characterized in that said flash memory includes  
at least one predetermined segment particularly  
divided to set as a compact-disk (CD) device and  
to store said internal file; said CD device including  
a start program adapted to cause said processing  
25 unit of said electronic apparatus to detect via said

control unit a virtual CD-ROM in said CD device,  
and thereby locate said start program to  
automatically execute and play said internal file.

- 5    2. The portable data storage device as claimed in claim  
1, wherein said interface unit includes a universal  
serial bus (USB) plug for coupling with a  
corresponding USB socket on said electronic  
apparatus.

10

3. The portable data storage device as claimed in claim  
1, wherein said start program includes an  
auto-execution file and an application having  
driving mechanisms for playing said internal file.

15

4. The portable data storage device as claimed in claim  
3, wherein said driving mechanisms of said  
application sequentially include:

20    copying said internal file from said predetermined  
segment to another segment of said flash memory;

starting a corresponding program to play said copied  
internal file; and

25

deleting said copied internal file after completion  
of playing of said copied internal file.

5. The portable data storage device as claimed in claim  
5 3, wherein said driving mechanisms of said  
application sequentially include:

copying said internal file from said predetermined  
segment of said flash memory to a storage unit of  
10 said electronic apparatus;

starting a corresponding program to play said copied  
internal file; and

- 15 deleting said copied internal file after completion  
of playing of said copied internal file.

6. The portable data storage device as claimed in claim  
3, wherein said auto-execution file further includes  
20 an icon instruction and an icon file representing  
said portable data storage device, so as to  
automatically display a designated icon in an  
operating system of said electronic apparatus to  
represent said portable data storage device.

25

7. The portable data storage device as claimed in claim  
1, wherein said control unit comprises a micro  
controller.
- 5 8. The portable data storage device as claimed in claim  
7, wherein said micro controller includes a read-only  
memory for recording a control program thereon.
9. The portable data storage device as claimed in claim  
10 1, wherein said internal file is selected from a  
group consisting of image files, picture files, word  
data files, protection programs, service programs,  
other programs and drivers thereof, and auto  
installation programs, and combinations of any two  
15 or more items thereof.
10. A portable data storage device adapted to couple  
with an electronic apparatus for said electronic  
apparatus to automatically execute and play an  
20 internal file stored in said portable data storage  
device, comprising:
- an interface unit for coupling with a processing  
unit of said electronic apparatus;
- 25

a flash memory into and from which data can be written and read; and

5 a control unit located between and coupled with said interface unit and said flash memory to control input and output of data into and from said flash memory;

10 said portable data storage device being characterized in that said flash memory being divided into a first, a second, and a third segment; said first segment being set as a CD device having a start program, said second segment being a general read/write segment, and said third segment being used to store said internal file; and said processing  
15 unit of said electronic apparatus being caused to detect via said control unit a virtual CD-ROM in said CD device, and thereby locates said start program to automatically execute and play said internal file.

20

11. The portable data storage device as claimed in claim 10, wherein said interface unit includes a universal serial bus (USB) plug for coupling with a corresponding USB socket on said electronic  
25 apparatus.

12. The portable data storage device as claimed in claim  
10, wherein said start program includes an  
auto-execution file and an application having  
5 driving mechanisms for playing said internal file.

13. The portable data storage device as claimed in claim  
12, wherein said driving mechanisms of said  
application sequentially include:

10

copying said internal file from said third segment  
to said second segment of said flash memory;

starting a corresponding program to play said  
15 internal file in said second segment; and

deleting said internal file in said second segment  
after completion of playing of said internal file.

20 14. The portable data storage device as claimed in claim  
12, wherein said driving mechanisms of said  
application sequentially include:

copying said internal file from said third segment  
25 of said flash memory to a storage unit of said

electronic apparatus;

starting a corresponding program to play said  
internal file stored in said storage unit; and

5

deleting said internal file stored in said storage  
unit after completion of playing of said internal  
file.

10 15. The portable data storage device as claimed in claim  
12, wherein said auto-execution file further  
includes an icon instruction and an icon file  
representing said portable data storage device, so  
as to automatically display a designated icon in  
15 an operating system of said electronic apparatus  
to represent said portable data storage device.

16. The portable data storage device as claimed in claim  
10, wherein said control unit comprises a micro  
20 controller.

17. The portable data storage device as claimed in claim  
16, wherein said micro controller includes a  
read-only memory for recording a control program  
25 thereon.

18. The portable data storage device as claimed in claim 10, wherein said third segment of said flash memory is a hidden segment that could not be read by users.

5

19. The portable data storage device as claimed in claim 18, wherein said hidden segment has a password pre-recorded therein, and said control unit is adapted to decrypt and compare an input password with said pre-recorded password to determine whether data may be read from or written into said hidden segment.

10

20. The portable data storage device as claimed in claim 10, wherein said internal file is selected from a group consisting of image files, picture files, word data files, protection programs, service programs, other programs and drivers thereof, and auto installation programs, and combinations of any two or more items thereof.

15

20

21. A method of automatic execution of a portable data storage device, comprising the following steps:

25 coupling an interface unit of said portable data



storage device with a processing unit of an electronic apparatus, so as to cause said processing unit to detect a virtual CD-ROM in a CD device set in a predetermined segment of a flash memory of said portable data storage device; and

causing said processing unit of said electronic apparatus to locate via a control unit of said portable data storage device a designated start program in said virtual CD-ROM, and to automatically execute and play an internal file stored in another predetermined segment of said flash memory of said portable data storage device.

22. The method of automatic execution of a portable data storage device as claimed in claim 21, further comprising steps of executing an auto-execution file and an application having driving mechanisms for playing said internal file that are included in said start program.

23. The method of automatic execution of a portable data storage device as claimed in claim 22, wherein said step of executing said application having driving mechanisms for playing said internal file further

includes the steps of:

copying said internal file from said predetermined  
segment to another segment of said flash memory;

5

starting a corresponding program to play said copied  
internal file; and

deleting said copied internal file after completion  
10 of playing of said copied internal file.

24. The method of automatic execution of a portable data  
storage device as claimed in claim 22, wherein said  
step of executing said application having driving  
15 mechanisms for playing said internal file includes  
the steps of:

copying said internal file from said predetermined  
segment of said flash memory to a storage unit of  
20 said electronic apparatus;

starting a corresponding program to play said copied  
internal file; and

25 deleting said copied internal file after completion

of playing of said copied internal file.

25. The method of automatic execution of a portable data storage device as claimed in claim 22, wherein said  
5 step of executing said auto-execution file further includes the step of executing an icon instruction to cause an operating system of said electronic apparatus to automatically display a designated icon representing said portable data storage device.

10

26. A method of automatic execution of a portable data storage device, comprising the following steps:

coupling an interface unit of said portable data  
15 storage device with a processing unit of an electronic apparatus, so as to cause said processing unit to detect a virtual CD-ROM in a CD device set in a first segment of a flash memory of said portable data storage device; and

20

causing said processing unit of said electronic apparatus to locate via a control unit of said portable data storage device a designated start program in said virtual CD-ROM, and to automatically  
25 execute and play an internal file stored in a third

segment of said flash memory of said portable data storage device.

27. The method of automatic execution of a portable data storage device as claimed in claim 26, further comprising steps of executing an auto-execution file and an application having driving mechanisms for playing said internal file that are included in said start program.

10

28. The method of automatic execution of a portable data storage device as claimed in claim 27, wherein said step of executing said application having driving mechanisms for playing said internal file further includes the steps of:

15

copying said internal file from said third segment to a second segment of said flash memory; said second segment being a general read/write segment;

20

starting a corresponding program to play said internal file in said second segment; and

deleting said internal file in said second segment after completion of playing of said internal file.

25

29. The method of automatic execution of a portable data storage device as claimed in claim 27, wherein said step of executing said application having driving mechanisms for playing said internal file further the steps of:

copying said internal file from said third segment of said flash memory to a storage unit of said electronic apparatus;

starting a corresponding program to play said internal file stored in said storage unit; and

deleting said internal file stored in said storage unit after completion of playing of said internal file.

30. The method of automatic execution of a portable data storage device as claimed in claim 27, wherein said step of executing said auto-execution file further includes the step of executing an icon instruction to cause an operating system of said electronic apparatus to automatically display a designated icon representing said portable data storage device.

31. The method of automatic execution of a portable data  
storage device as claimed in claim 26, further  
comprising the step of setting said third segment  
5 of said flash memory as a hidden segment that could  
not be read by users.